

Key updates and forward look EMODnet Chemistry

18th EMODnet Steering Committee
23 May 2023

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Chemistry lot

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Progress against project planning: data collection & products generation

EMODnet Chemistry 5 contract started on 03/10/2021 (now M19) and will be continued

WP	ACTIVITY DESCRIPTION	YEAR 1												YEAR 2											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2	Chemistry data collection and metadata compilation and arranging common access																								
2.1	Review guidelines and Training Activity																								
2.2	Chemistry data gathering and metadata population																								
	Focus on eutrophication data																								
	Focus on contaminants data																								
	Focus on micro litter data																								
2.3	Formulating formats and vocabularies for marine litter and data gathering																								
2.4	Nutrients loads from major rivers																								

WP	ACTIVITY DESCRIPTION	YEAR 1												YEAR 2											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
3	Generation of data products, including collections																								
3.1	Generating harmonised, aggregated and validated data collections																								
	Focus on eutrophication data collections																								
	Focus on contaminants data collections																								
	Focus on micro litter data collections																								
	Focus on beach and seafloor litter collections																								
3.2	Generating DIVA maps of eutrophication																								
3.3	Higher resolution maps at river mouths																								
3.4	Tuning data collection and dedicated maps on contaminants																								
3.5	Generating validated data collections and maps of marine litter																								

Progress against project planning: technical dev. & outreach

WP	ACTIVITY DESCRIPTION	YEAR 1												YEAR 2											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
4	Technical development for interoperability, services and tools																								
4.1	Transforming the functionality of existing portal services into machine-to-machine services and contributing to their deployment in Central portal																								
4.2	Further developing the EMODnet marine litter database																								
4.3	Improving the advanced viewing services																								
4.4	Streamline generation and publishing of contaminants maps																								
4.5	Operation and monitoring of well functioning of services and gathering KPI																								

WP	ACTIVITY DESCRIPTION	YEAR 1												YEAR 2											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
5	Uptake, outreach and interaction																								
5.1	Maintain and operate a Help service																								
5.2	Interaction and regular dialogue with MSFD stakeholders																								
5.3	Maintain international cooperation and interoperability																								

Migration actions

- Chemistry narrative
- Content transferring to CP Reports catalogue
- Amended URLs of external services
- Metadata entries for all Chemistry products in Sextant Catalogue
- Inclusion of Chemistry products in the CP Catalogue by CSW harvesting
- Adoption of OGC services for all map layers

European Marine Observation and Data Network (EMODnet)


About | Data Services | Solutions | Themes | Community Pages | Atlas of the Seas | EU-China | News & Events | FAQ

Home > Themes > Chemistry

Chemistry

EMODnet Chemistry provides easy access to marine chemical data, standardised harmonized validated data collections and reliable data products, which are highly relevant to assessing ecosystem status according to the Marine Strategy Framework Directive, for all European marine regions.

Numerous substances are considered; most of them are invisible to the naked eye and can only be detected and tracked using special sensors or by laboratory analysis. This evidence-based information is essential for understanding seawater chemistry and its natural and/or human-induced variations. It is also essential for identifying and taking action against spatio-temporal environmental changes that pose risks to marine ecosystems and human health.



EMODnet Chemistry - Water body dissolved oxygen concentration

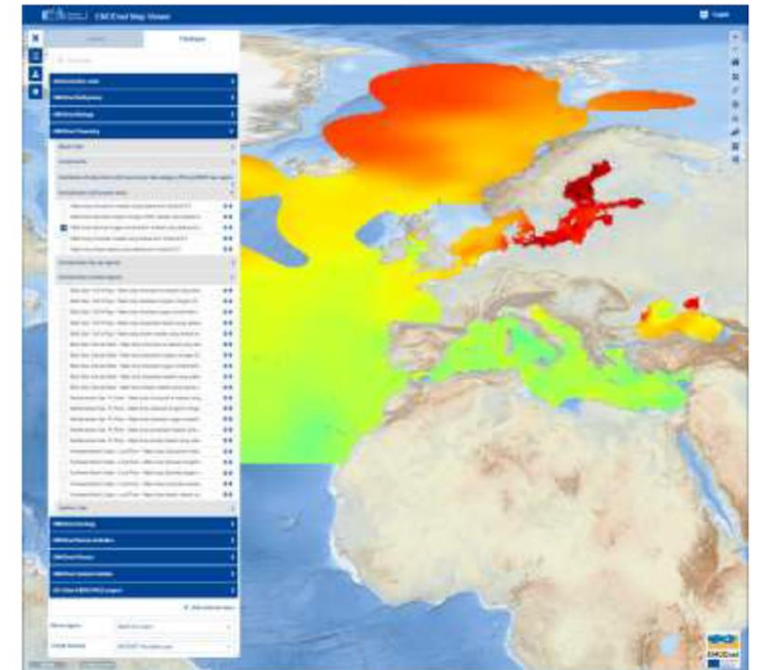
PAGE CONTENTS

- Objectives [Access the Map Viewer >](#)
- Eutrophication [Access the Products Catalogue >](#)
- Ocean acidification
- Contaminants
- Marine litter
- Key services
- Data & Products
- Eutrophication products
- Contaminants products
- Marine litter products

Objectives

The first goal of EMODnet Chemistry is to collect and validate data on the state of the seas and oceans and make them freely available and interoperable. To this end, the partnership needs to manage the heterogeneity, complexity, quality and large volume of observational datasets on seawater quality, biota contamination, sediment quality and potential pollution.

Second, EMODnet Chemistry generates and publishes standardised, harmonised and quality-controlled data collections and reliable derived data products. These are all relevant for the implementation of European Union (EU) marine policies such as the Marine Strategy Framework Directive (MSFD), Water Framework Directive, and Maritime Spatial Planning Directive. Specifically, EMODnet Chemistry contributes to Descriptors 5 (eutrophication), 8 (chemical pollution), 9 (contaminants in seafood) and 10 (marine litter) of the MSFD, as testified by a number of [Use Cases](#).



Filter

Expand | Collapse

TYPE OF RESOURCES

- Series (02)

AVAILABLE ACTIONS

- Downloadable (92)
- Viewable (77)

TOPICS

- Oceans (81)
- Environment (14)
- Biota (4)
- Geoscientific information (2)

KEYWORDS

- Oceanographic geographical features (82)
- EMODnet Chemistry (92)
- Oceans (81)
- Water body (85)
- Baltic Sea (44)
- 10 more

CONTACT FOR THE RESOURCE

- EMODnet Chemistry (90)
- National Institute of Oceanography and Applied Geophysics - OGS, Division of Oceanography... (42)
- Research VIGIES (Information Validation Service for Integrated Management and Monitoring) (44)
- National Institute for Marine Research and Development "Giuseppe Arduini" (43)
- Hellenic Centre for Marine Research, Institute of Oceanography (41)
- 20 more

PROVIDED BY

- EMODnet Chemistry (92)

YEARS

- 2022 (1)
- 2021 (92)

FORMATS

- Climate and Forecast NetCDF (83)
- EMODnet Beach Litter data format (1)
- EMODnet Sea-floor litter data format (1)
- ODV/Net (3)
- ODV/Net (2)
- 6 more

REPRESENTATION TYPES

- Vector (88)

RESOLUTION

- 0.25 degree (5)
- 0.125 degree (5)
- 0.1 degree (18)
- 0.05 degree (5)
- 0.01 degree (10)
- 2 more

Categories

Mediterranean Sea - Eutrophication and Acidity aggregated datasets 1911/2020...

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification, contaminants and litter. The chosen parameters are relevant for the Marine Strategy Framework Directive (MSFD), TS-00 water temperature and Water body salinity variables have been also

National Institute of Oceanography and Applied Geophysics - OGS, Division of Oceanography

Categories

European floating micro-litter standardized, harmonized and validated datasets...

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification, contaminants and litter. The chosen parameters are relevant for the Marine Strategy Framework Directive (MSFD), in particular for descriptors 5, 8, 9 and 10. These datasets

National Institute of Oceanography and Applied Geophysics - OGS, Division of Oceanography

Categories

European sea floor litter standardized, harmonized and validated datasets...

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification, contaminants and litter. The chosen parameters are relevant for the Marine Strategy Framework Directive (MSFD), in particular for descriptors 5, 8, 9 and 10. These datasets contain

National Institute of Oceanography and Applied Geophysics - OGS, Division of Oceanography

Categories

Sea floor litter - Composition of litter according to material categories in...

This visualization product displays the marine litter material categories percentage per trawl. EMODnet Chemistry included the collection of marine litter in its 3rd phase. Since the beginning of 2018, data of sea floor litter collected by international fish-trawl surveys have been gathered and processed in the EMODnet litter VIGIES (Information Validation Service for Integrated Management and Monitoring)

Categories

Sea floor litter - Plastic bags density normalized per km² 2011/2021 v2021

This visualization product displays plastic bags density per trawl. EMODnet Chemistry included the collection of marine litter in its 3rd phase. Since the beginning of 2018, data of sea floor litter collected by international fish-trawl surveys have been gathered and processed in the EMODnet Chemistry Marine Litter Database (MLDB). The

Research VIGIES (Information Validation Service for Integrated Management and Monitoring)

Categories

Sea floor litter - Trawls locations 2006/2021 v2021

This visualization product displays the location of all the surveys present in the EMODnet marine litter database (MLDB). The different fishing gears used are represented by different colors. EMODnet Chemistry included the collection of marine litter in its 3rd phase. Since the beginning of 2018, data of sea floor litter collected by

Research VIGIES (Information Validation Service for Integrated Management and Monitoring)

Categories

Sea floor litter - Density per trawl normalized per km² 2011/2021 v2021

This visualization product displays the density of sea floor litter per trawl. EMODnet Chemistry included the collection of marine litter in its 3rd phase. Since the beginning of 2018, data of sea floor litter collected by international fish-trawl surveys have been gathered and processed in the EMODnet Chemistry Marine Litter Database

Research VIGIES (Information Validation Service for Integrated Management and Monitoring)

Categories

Sea floor litter - Fishing related items density normalized per km² 2011/2021...

This visualization product displays fishing related items density per trawl. EMODnet Chemistry included the collection of marine litter in its 3rd phase. Since the beginning of 2018, data of sea floor litter collected by international fish-trawl surveys have been gathered and processed in the EMODnet Chemistry Marine Litter Database

Research VIGIES (Information Validation Service for Integrated Management and Monitoring)

Categories

Baltic Sea - DIVAnd 6-year seasonal analysis of Water body chlorophyll-a...

Moving 6-year analysis of Water body chlorophyll-a in the Baltic Sea. Four seasons (March-May, June-August, September-November, December-February). Every year of the time dimension corresponds to a 6-year centred average. Periods span between 1990-1995 and 2015-2016. Analyses for depths (m)

Swedish Meteorological and Hydrological Institute

Categories

Black Sea - Danube Delta - DIVAnd 4D seasonal analysis of Water body...

Water body chlorophyll-a - Seasonal Climatology for Danube Delta (NW Black Sea) for the period 2001-2018 on the domain: Lon E20-530 E, Lat N43.7-45 N. (winter: December-February, spring: March-May, - summer: June-August, -

Categories

Baltic Sea - DIVAnd 6-year seasonal analysis of Water body dissolved oxygen...

Moving 6-year analysis of Water body dissolved oxygen concentration in the Baltic Sea. Four seasons (March-May, June-August, September-November, December-February). Every year of the time dimension corresponds to a 6-year

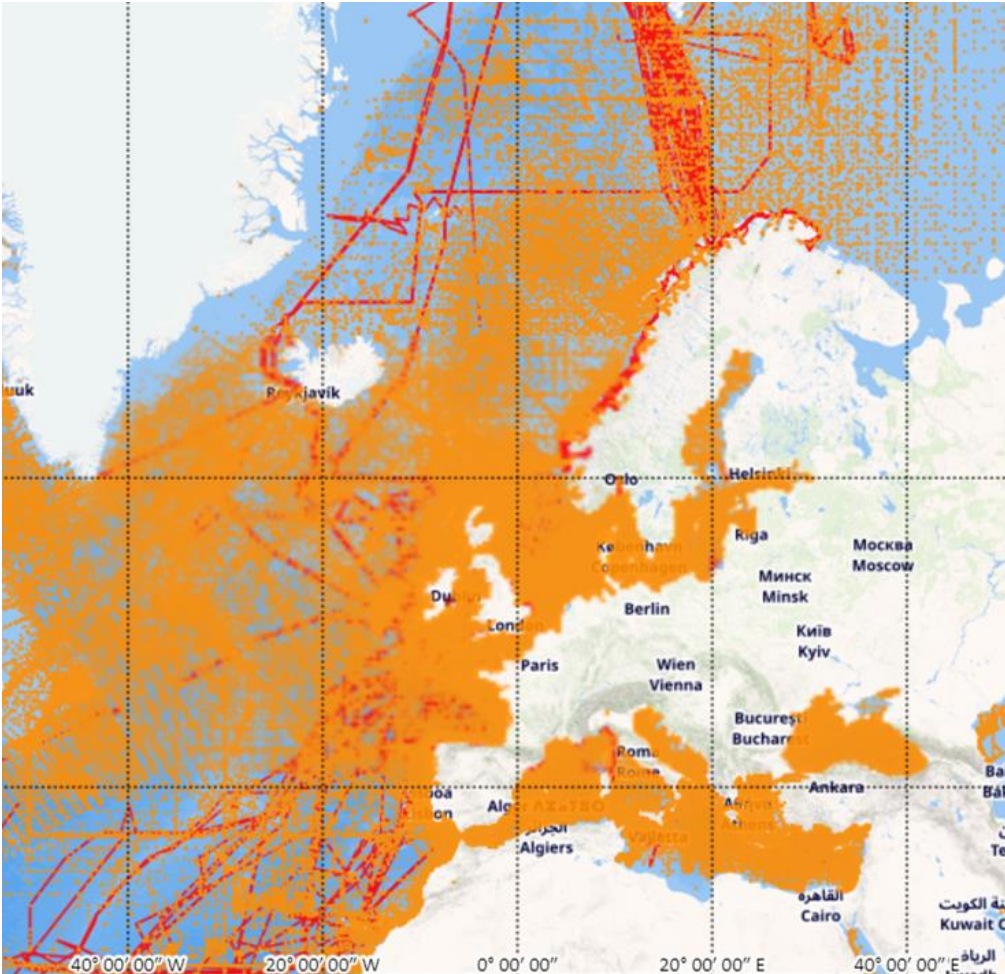
Categories

Baltic Sea - DIVAnd 6-year seasonal analysis of Water body phosphate 1980/2018...

Moving 5-year analysis of Water body phosphate in the Baltic Sea. Four seasons (March-May, June-August, September-November, December-February). Every year of the time dimension corresponds to a 6-year centred average. Periods

Progress on data and geographic coverage – May 2023


- Steady increase in the datasets supplied by the network of 66 data centers mobilized by EMODnet Chemistry
- Further enriching or amending data and metadata already available



• **CDI records and data sets:**

June 2014: **661095**;
June 2016: **807959**;
Feb 2018: **939400**;
June 2020: **1010933**;
Apr 2021: **1051948**;
September 2021: **1122527**;
April 2022: **1147589**;
October 2022: **1191652**
May 2023: 1230681

- **66** Data Centres
- **32** Countries
- **581** Originators
- **1868 – 2023** years
- **90.38%** unrestricted
- **9.62%** to be negotiated

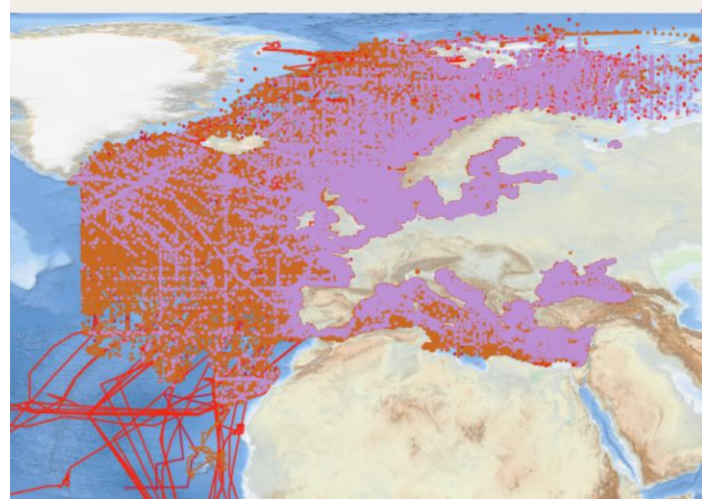
- 
- Increase 3,3 %
 - + 39,029 CDI datasets
 - + 31 originators

Data and geographic coverage

Very good progress in data gathering for Eutrophication, Contaminants, and Marine Litter

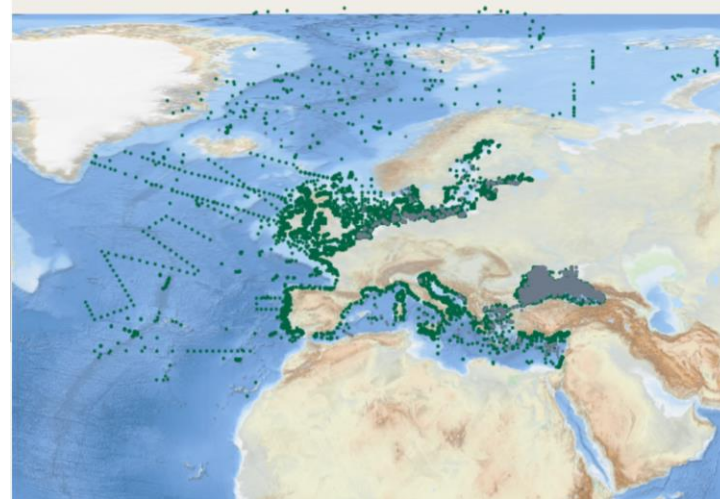
Eutrophication CDI = 1068855

Per Parameter group	Datasets
Dissolved gasses	791762
Fertilisers	542195
Silicates	398279
Chlorophyll	371456
Acidity	195815
Organic matter	68719



Contaminants CDI = 125478

Per Parameter group	Datasets
Hydrocarbons	80225
Heavy metals	62073
Antifoulants	6338
Pesticides and biocides	37616
Polychlorinated biphenyls	23046
Radionuclides	3273
Pharmaceuticals	116



Marine litter: 43344

Per Parameter group	Datasets
Beach litter	15391

Per Parameter group	Datasets
Seafloor litter	26195

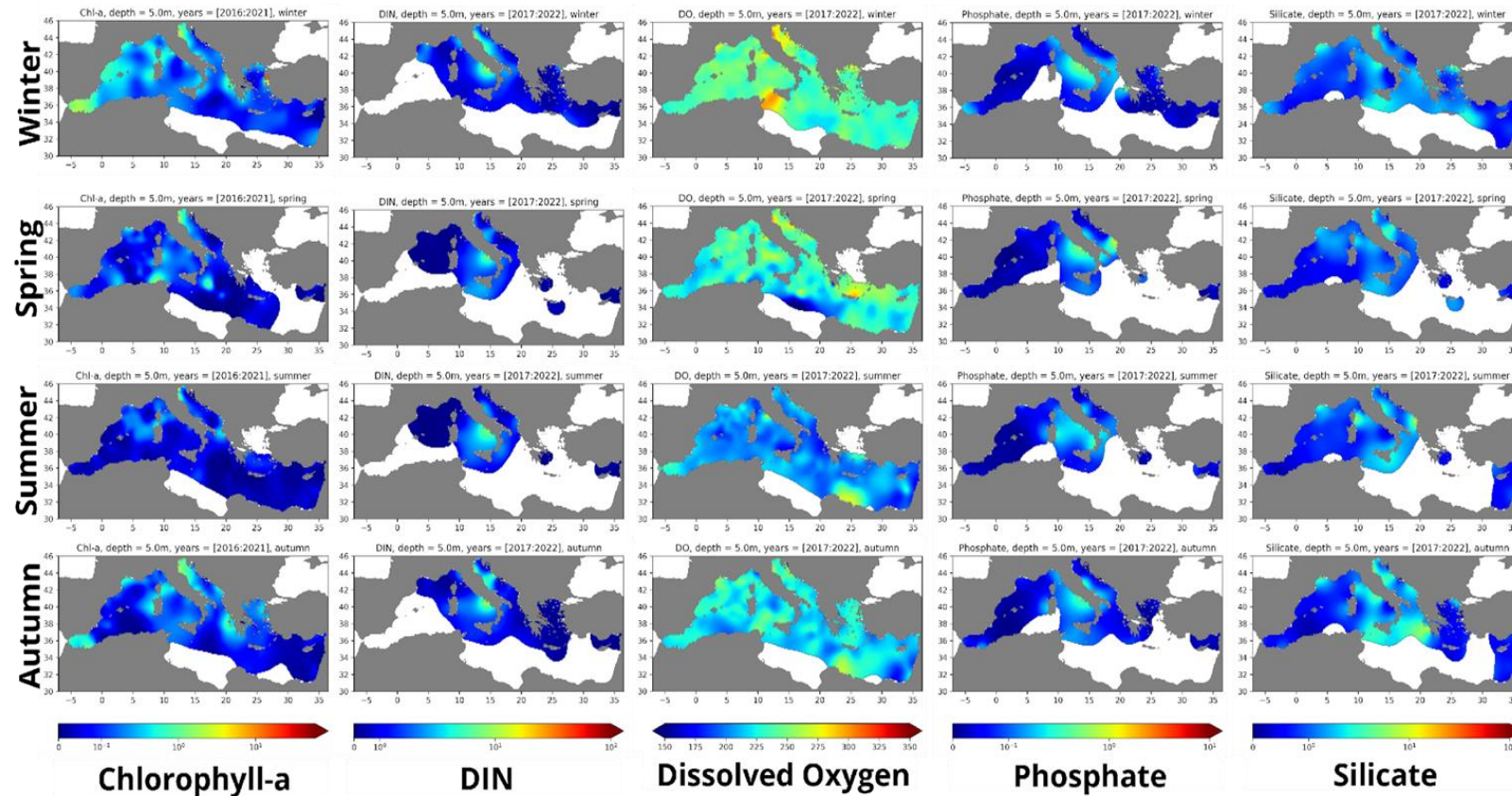
Per Parameter group	Datasets
Microlitter	1758



New maps

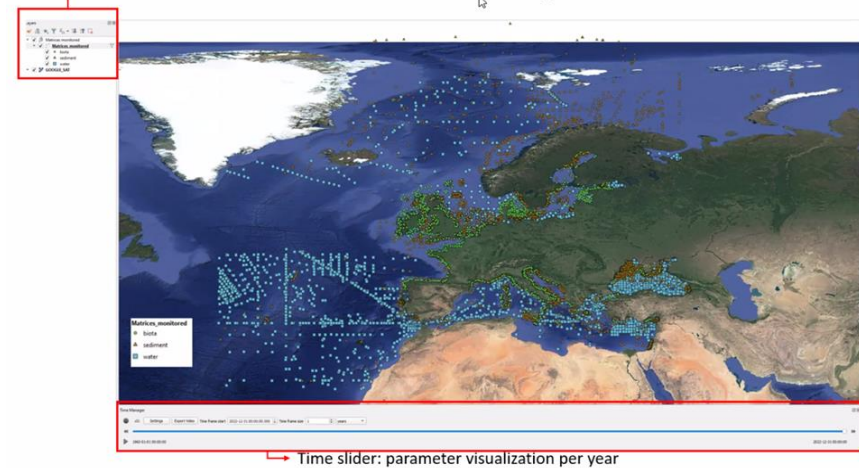
- Examples for Eutrophication

DIVAnd gridded fields – Mediterranean Sea
 seasonal spatial distributions, 5m depth
 last available 6-yr periods (2017-2022, 2016-2021)
 masked fields (data gaps)

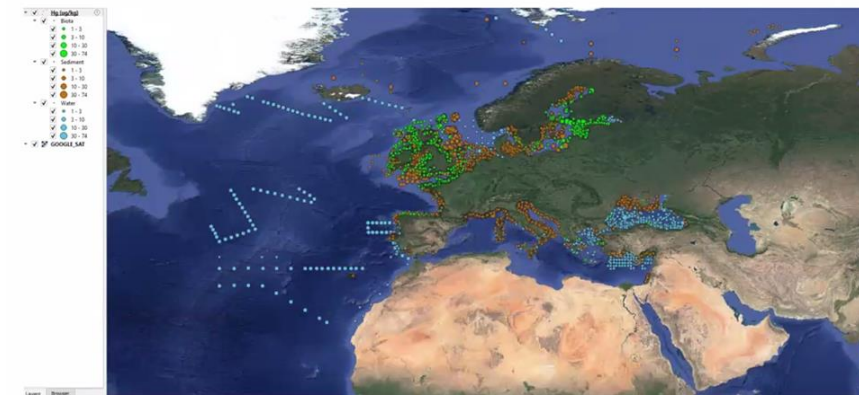


- Examples for Contaminants

Map1: Monitored Matrices



Map2: Mercury



International cooperation



©juicy fish on Freepik

Marine In situ Collaboration
(MIC) Technical Working Group



UN Global Partnership on Marine Litter Digital Platform
and Global ML and Plastic Pollution Ontology peer review
process



MoU with



MoU with EURO Argo
ERIC



International Experts on Marine Plastic Litter
Monitoring Data Sharing Project, MOEJ



Alignment to facilitate contaminants data reporting



- Microlitter data management prototype
- Japan, Sept/Oct 2023 - workshop with global stakeholders

Repository for MSFD Contaminants (in progress)
and Marine litter (consolidated collaboration)



EUROqCHARM



- April 2023 - Global event to foster database synchronization
- Oct 2023 - Data reporting as a tool for policy: EMODnet

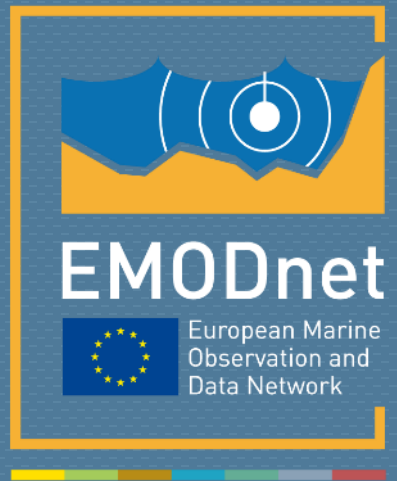
Marine litter data



Priority actions for next six months (2')

- Finalize publication of data collections and data products
- Meeting with MSFD experts on contaminants and litter
- Revision of KPI (2.B - Usage of data products)
- Centralization, remaining wishes:
 - i. Improving colour ranges and legend for DIVA gridded maps
 - ii. Direct links from Product records to CP Map Viewer folders
 - iii. Direct download from Product records on the top (now Distribution)
 - iv. Information about CP KPIs
- Continue to support JRC and EU TGs in providing harmonised and validated data.
To this end, confirming EMODnet's role in collecting MSFD monitoring data would facilitate the mechanism for obtaining data from Member States.





emodnet.ec.europa.eu

Your gateway to marine data in Europe





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